

receiving a single user action associated with an option control,
toggling the selection state of this associated option control without affecting the
selection state of any other control;

whereby a user can see at a glance which subgroups and options are available and thus more quickly locate relevant options, and whereby a user can see at a glance which options are currently selected, making searches faster and easier.

Drawings

Corrected drawings are enclosed.

Remarks - General

By the above amendment, applicant has revised the title to more clearly describe the subject matter of the invention. The new title is drawn from the abstract.

Applicant has also rewritten the Claims 1 to 24 as new Claims 25 and 33 to describe the invention more distinctly so as to overcome the technical rejections and define the invention in a patentable manner over the cited prior art.

Several dependent claims have been dropped per the Examiner's suggestions.

Applicant's addition of a new paragraph to the specification does not add any new subject matter as the information was previously described clearly by claims and is well known in the art.

Claim Objections as to Informality

Parenthetical abbreviations such as (CSS) and (UD) have been removed from all claims, with all terms spelled out in full.

Claim 20, which is new Claim 32, has been rewritten in independent form.

Claim Rejections - 35 USC §112

Claims 1-19 were rejected under §112 as being indefinite. Claim 1 has been rewritten as new claim 25 using language from the abstract that distinctly claims the invention's subject matter: a system for quickly and easily selecting **multiple options** which are all associated with a **single data element** and have been organized into **subgroups**.

The phrase "if the control is selected, deselect it, otherwise select it" in claims 1 and 11 was said to be unclear. Claim 1 has been rewritten as new claim 25, specifying that each control has two states: selected and not selected, with a controller that toggles between the two states upon receiving an action from a user-input device.

Related claims have been revised in a similar manner.

Applicant submits that the revised specification now complies with §112 and therefore requests withdrawal of this objection.

Claim Rejections - 35 USC §103

Claims 1-15, 19 and 24 were rejected under §103 as being unpatentable over Wical (U.S. Pat. No. 6,112,201). Claim 1 has been rewritten as new claim 25, and claim 24 rewritten as new claim 33, to define the invention in a patentable manner over Wical, as mentioned in the above specification amendment and further discussed in the following paragraphs.

Wical does not support selecting multiple options

While Wical's virtual bookshelf system shows additional information about the selected category, including related categories (Wical col. 9, line 7 through col. 10, line 35), he does not and cannot allow a user to see at a glance which categories (plural) are selected since only a single category can be selected. The case of multiple selections is not merely an extension of a single selection. For example, Wical's category hierarchy is displayed in a scrollable list (see scroll bar 320) and cannot even allow a user to see every category, selected or not, at a glance since, in the general case, some categories will be scrolled off screen and thus not visible.

One of the key user interface factors in selecting a control is "whether only one option or more than one option may be selected at once" (applicant p. 3, lines 14-15). Wical teaches a virtual bookshelf system that includes a plurality of category controls as a hierarchical list, and thus a plurality of subgroup labels. According to Wical's abstract, "The user is permitted to select a particular category...."; i.e. to select only one category (one option or value). Wical does not teach a specific method of selecting a category as these are well known in the art. Wical does not address whether or not selecting a category affects the selected state of another category.

Wical's teachings suggest a button bar to invoke a plurality of actions that relate to the selected category. As suggested by the Examiner, it would have been obvious to a person of ordinary skill in the art to add a button or control to deselect the selected category with a single user action. Although Wical's system does not support multiple selections, it is also well known in the art to use a single button action to clear every selection. For example, many web pages contain a "Clear" button that deselects all selected controls. When one skilled in the art turns to the more complex problem of selecting or deselecting one specific control among a system of controls that support multiple selections, he or she will refer to standard user interface conventions (applicant, p. 3, lines 12-20), which require holding a modifier key (applicant, p. 5, lines 12-13) while making a selection.

Dependent claims

As to objections to claim 2, reorganized as new claim 27, Wical teaches that an action button can be invoked with a mouse click (col. 10, lines 41-43), which is well known in the art but does not address the user interface for multiple selections. What is not taught in Wical, but is well known in the art, is that "in order to select multiple categories, a user must generally hold a modifier key" (applicant, p. 5, lines 12-13) while clicking on a mouse button. New claim 27 distinguishes applicant's invention from the prior art, specifying that the single action can be just a mouse click; no modifier key is required.

As to objections to claim 3, reorganized as new claim 28, Wical does not discuss selecting a category or invoking an action with a key press; the cited text (col. 10, lines 36-41) just introduces the button bar. What is not taught in Wical, but is well known in the art, is that a key press such as on the space bar will often toggle the state of a control. When used to select a control that is one of many related controls for a single data element, this action typically deselects the related controls unless a modifier key is held at the same time. New claim 28 distinguishes applicant's invention from the prior art, specifying that the single action can be just a key press; no modifier key is required.

As to objections to claim 4, reorganized and rewritten as new claim 26, Wical teaches several related ideas but misses the key distinguishing feature of this claim. While Wical (col. 11, lines 18-20) teaches "a detail function that displays all entries", it is clear from Figs. 2a-2e and the text that not all of the entries are necessarily visible at once, but may require scrolling (using scroll bar 320). Scrollable lists are well known in the art (e.g. applicant, p. 5, lines 9-11), and are specifically designed for the case where only a subset of options are visible at once.

An additional clause was added to new claim 26 to clearly distinguish it from the well known prior art of a pop-up or drop-down menu (e.g. applicant, p. 5, lines 6-7), which typically shows every option when the menu is selected but only shows a single option when the menu is not selected.

Dependent claims 5 and 6 have been dropped per the Examiner's suggestion.

As to objections to claims 7 and 8, reorganized as new claims 29 and 30, Wical teaches a hierarchic outline arrangement and a sideways tree chart arrangement but does not teach an arrangement of rows and columns. Fig. 1 is a block diagram illustrating that the Reference Tables 150 data structure contains several different types of records which are used to create the screen arrangements (col. 6, lines 14-18) but are not themselves screen arrangements. In Wical and other systems with scrollable lists of options, and in the known prior art such as pop-up or drop-down menus of text, every category or option at the deepest level of the hierarchy is physically below all previous deepest options in the hierarchy. New claims 29 and 30

distinguish applicant's invention by placing some of the deepest options adjacent to other deepest options, thus reducing the amount of vertical space required to display the options.

As to objections to claim 9, reorganized as new claim 31, Wical does not discuss a checkbox, as that term is used in the art of graphical user interface design to refer to a small box that is empty when in not selected, and typically contains an "x" or a checkmark when selected. Col. 10, lines 26-28 indicate that the category name is displayed in a box, which corresponds more closely to the graphical user interface design element known as a button. Col. 17, lines 46-59 and col. 19, line 62 through col. 20, line 6 indicate that various information is displayed in a box, but this information is not even a category or option control, much less a checkbox. New claim 31 specifies that applicant's invention can beneficially be implemented using checkboxes, despite that this "runs counter to conventional recommendations" (applicant, p. 8, lines 18-20).

Dependent claim 10 has been dropped per the Examiner's suggestion.

Dependent claims 11, 12, and 13 have been dropped per the Examiner's suggestion.

Dependent claim 14 has been dropped per the Examiner's suggestion.

Dependent claim 15 has been dropped per the Examiner's suggestion.

Dependent claim 19 has been dropped per the Examiner's suggestion.

Dependent claims 16-18 and 21-22 (but not 20) have been dropped per the Examiner's suggestion.

As to objections to claim 20, rewritten as new claim 32, Wical does not support selecting multiple options and thus does not bear on new claim 32. Fruensgaard et. al. (U.S. Pat. No. 6,513,036) describes many aspects of a search system that are well known in the art, but does not add any specific information that relates to Wical or bears on new claim 32. No prior art search system includes all of the physical features of new claim 32, nor the attendant benefits of a faster and easier search process.

Dependent claim 23 has been dropped per the Examiner's suggestion.

Conclusion

For all of the above reasons, applicant submits that the specifications and claims are now in proper form, and that the claims all define patentably over the prior art. Therefore applicant submits that this application is now in condition for allowance, which action is respectfully solicited.

Conditional Request for Constructive Assistance

Applicant has amended the specification and claims of this application so that they are proper, definite, and define novel structure which is also unobvious. If, for any reason, this application is not believed to be in full condition for allowance, applicant respectfully requests the constructive assistance and suggestions of the Examiner pursuant to M.P.E.P. §2173.02 and § 707.07(j) in order that the undersigned can place this application in allowable condition as soon as possible and without the need for further proceedings.

Very respectfully,



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